APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,302	07/14/2003	Wayne D. Grover	LAMA121485	7562

26389   7590   12/16/2008
CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC
1420 FIFTH AVENUE
SUITE 2800
SEATTLE, WA 98101-2347

EXAMINER
VIANA DI PRISCO, GERMAN

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
12/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/620,302	GROVER ET AL.
	Examiner	Art Unit	
	GERMAN VIANA DI PRISCO	2617	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>03 September 2008</u>.

2a) ☒ This action is **FINAL.**   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-28</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-8, 10-22 and 24-28</u> is/are rejected.

7) ☒ Claim(s) <u>9 and 23</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>06/25/2008</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1.   The information disclosure statement (IDS) submitted on 06/25/2008 is being

considered by the examiner.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

3.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1.   Determining the scope and contents of the prior art.
    2.   Ascertaining the differences between the prior art and the claims at issue.
    3.   Resolving the level of ordinary skill in the pertinent art.
    4.   Considering objective evidence present in the application indicating
            obviousness or nonobviousness.

4.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

5.   Claims 1-3 and 15-17 rejected under 35 U.S.C. 103(a) as being unpatentable

over Ellinas et al. ("Ellinas", United States Patent No.: 6,760,302 B1).

Consider claims 1 and 15, Ellinas clearly shows and discloses a

telecommunications network and method, comprising: plural nodes connected by plural

spans and arranged to form a mesh network (nodes 301, 303, 305, 307, 309, 311, 313,

315, 319, and 321 in figure 3 and column 8, lines 27-30); at least one pre-configured

(pre-determined) cycle of spare capacity being established in the mesh network, the

pre-configured cycle including plural nodes of the mesh network (protection cycles 323,

325, 327, 3229, and 331 in figure 3 and column 8, lines 30-32) and being pre-configured

prior to any span or node failure (protection cycles are pre-determined prior to the

activation of the network, column 7, lines 59-62); and the plural nodes of the pre-

configured cycle (protection cycle 331 in figure 3) being configured to protect at least

one path segment (segment 317-311-309), where the path segment includes at least

two intersecting nodes(nodes 317 and 309) within the pre-configured cycle (331 in

figure 3) and at least one intermediate node (311) in a path that includes the two

intersecting nodes(317 and 309) and straddles the pre-configured cycle, the

intermediate node not being a part of the pre-configured cycle (node 311 is not on

protection cycle 331 in figure 3) providing two restoration paths to protect against a

failure of a span straddling the pre-configured cycle (if straddling path 333 fails, node

309 can communicate with node 311 along protection path 331 and through node 317

or along protection path 331 and through node 313).

However Ellinas does not specifically disclose that the failure of a span on the

pre-configured cycle provides one restoration path.

Even though Ellinas does not specifically disclose a protection cycle going in the

opposite direction of protection cycle 331 and therefore not including the intermediate

node 311, official notice is taken that it would be obvious to a person of ordinary skill in

the art to do so in order to provide an alternate path in case of failure.

Consider claims 2 and 16, and applied to claims 1 and 15 respectively above,

Ellinas clearly shows a mesh network in which the path segments are segments of a

working path with a start node not connected to the pre-configured cycle (segment

starting at node 321 in figure 3).

Consider claims 3 and 17 , and applied to claims 1 and 15 respectively above,

Ellinas clearly shows a mesh network in which the path segments are segments of a

working path with a start node not connected to the pre-configured cycle (segment

ending at node 303 in figure 3).

6.   Claims 4-7, 10, 18-21, and 24 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ellinas et al. ("Ellinas", United States Patent No.: 6,760,302 B1) in

view of Grover et al. ("Grover", United States patent Application Publication No.: US 2002/0181393 A1).

One of the applied references has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Consider claim 4, and as applied to claim 1 above, Ellinas clearly discloses a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures by modeling the network (identifying all working flows in the mesh network to be restored), (column 8 lines 16-20).

However Ellinas does not specifically disclose identifying the spare capacity of the pre-configured cycle to restore all working flows for all spans subject to failure in all path segments; and providing spare capacity along the pre-configured cycle sufficient to restore all working flows.

In the same field of endeavor Grover shows and discloses a mesh telecommunications network wherein traffic restoration routes are provided by determining the working capacity and corresponding spare capacity, and adapting the network to provide the required spare capacity (figures 1 and 2, abstract, paragraphs [0010]-[0030]).

Therefore it would have been obvious to a person of ordinary skill in the art a the time the invention was made to determine the working capacity and adapting the network to provide the required spare capacity as disclosed by Grover in the telecommunications network of Ellinas in order to provide efficient path protection in a mesh network.

Consider claim 5, and as applied to claim 1 above, Ellinas clearly discloses a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures.

However, Ellinas does not disclose establishing a pre-configured cycle comprising the steps of pre-selecting a set of candidate cycles for forming into pre-configured cycles; allocating working paths and spare capacity in the mesh network based on the set of candidate cycles; and providing the mesh network with spare

capacity arranged in pre-configured cycles according to the allocation determined in the preceding step.

In the same field of endeavor Grover shows and discloses a mesh telecommunications network wherein a set of eligible restoration routes is generated, the corresponding spare capacity is determined, and the network is adapted to provide the required spare capacity for the selected restoration routes (figures 1 and 2, abstract, paragraphs [0010]-[0030]).

Therefore it would have been obvious to a person of ordinary skill in the art a the time the invention was made to generate a set of eligible restoration routes, determine the corresponding spare capacity, and adapt the network to provide the required spare capacity for the selected restoration routes as disclosed by Grover in the telecommunications network of Ellinas in order to provide efficient path protection in a mesh network.

Consider claim 6, and as applied to claim 5 above, Ellinas clearly discloses a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures.

However, Ellinas does not specifically disclose that the allocation of working paths and spare capacity is jointly optimized.

In the same field of endeavor, Grover clearly shows and discloses establishing a bi-criteria (route and capacity) objective function for the selection of a set of restoration routes (figure 2 and paragraphs [0046]-[0049]).

Therefore it would have been obvious to a person of ordinary skill in the art a the time the invention was made to jointly optimize the allocation of working paths and spare capacity as disclosed by Grover in the telecommunications network of Ellinas in order to provide efficient path protection in a mesh network.

Consider claim 7, and as applied to claim 5 above, Ellinas clearly discloses a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures.

However, Ellinas does not specifically disclose pre-selecting candidate cycles by ranking a set of closed paths in the mesh network according to the degree to which each closed path protects spans on and off the closed path, and selecting candidate cycles from the set of closed paths.

In the same field of endeavor, Grover discloses ranking and selecting restoration routes from a larger set of candidates (paragraphs [0046]-[0057], table 3).

Therefore it would have been obvious to a person of ordinary skill in the art a the time the invention was made to select protection cycles from a set of large candidates by ranking said protection cycles as disclosed by Grover in the telecommunications network of Ellinas in order to provide efficient path protection in a mesh network.

Consider claim 10, and as applied to claim 5 above, Ellinas as modified by Grover discloses a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node

failures wherein other conventional methods of determining the directed cycles may also be used (column 12 lines 24-26).

Therefore it would have been obvious, to a person of ordinary skill in the art at the time the invention was made to use other conventional methods including a mixed selection strategy to pre-select protection cycles in the telecommunications network of Ellinas as modified by Grover for the purpose of optimizing the path protection in the network.

Consider claim 18, and as applied to claim 15 above, Ellinas clearly discloses a method of operating a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures by modeling the network (identifying all working flows in the mesh network to be restored), (column 8 lines 16-20).

However Ellinas does not specifically disclose identifying the spare capacity of the pre-configured cycle to restore all working flows for all spans subject to failure in all path segments; and providing spare capacity along the pre-configured cycle sufficient to restore all working flows.

In the same field of endeavor Grover shows and discloses a mesh telecommunications network wherein traffic restoration routes are provided by determining the working capacity and corresponding spare capacity, and adapting the network to provide the required spare capacity (figures 1 and 2, abstract, paragraphs [0010]-[0030]).

Therefore it would have been obvious to a person of ordinary skill in the art a the time the invention was made to determine the working capacity and adapting the network to provide the required spare capacity as disclosed by Grover in the method of operating telecommunications network of Ellinas in order to provide efficient path protection in a mesh network.

Consider claim 19, and as applied to claim 15 above, Ellinas clearly discloses a method of operating a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures.

However, Ellinas does not disclose establishing a pre-configured cycle comprising the steps of pre-selecting a set of candidate cycles for forming into pre-configured cycles; allocating working paths and spare capacity in the mesh network based on the set of candidate cycles; and providing the mesh network with spare capacity arranged in pre-configured cycles according to the allocation determined in the preceding step.

In the same field of endeavor Grover shows and discloses a mesh telecommunications network wherein a set of eligible restoration routes is generated, the corresponding spare capacity is determined, and the network is adapted to provide the required spare capacity for the selected restoration routes (figures 1 and 2, abstract, paragraphs [0010]-[0030]).

Therefore it would have been obvious to a person of ordinary skill in the art a the time the invention was made to generate a set of eligible restoration routes, determine the corresponding spare capacity, and adapt the network to provide the required spare capacity for the selected restoration routes as disclosed by Grover in the method of operating telecommunications network of Ellinas in order to provide efficient path protection in a mesh network.

Consider claim 20, and as applied to claim 19 above, Ellinas clearly discloses a method of operating a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures.

However, Ellinas does not specifically disclose that the allocation of working paths and spare capacity is jointly optimized.

In the same field of endeavor, Grover clearly shows and discloses establishing a bi-criteria (route and capacity) objective function for the selection of a set of restoration routes (figure 2 and paragraphs [0046]-[0049]).

Therefore it would have been obvious to a person of ordinary skill in the art a the time the invention was made to jointly optimize the allocation of working paths and spare capacity as disclosed by Grover in the method of operating telecommunications network of Ellinas in order to provide efficient path protection in a mesh network.

Consider claim 21, and as applied to claim 19 above, Ellinas clearly discloses a method of operating a telecommunications network in which redundant protection fibers

are pre-configured to form protection cycles used to protect the network against link or node failures.

However, Ellinas does not specifically disclose pre-selecting candidate cycles by ranking a set of closed paths in the mesh network according to the degree to which each closed path protects spans on and off the closed path, and selecting candidate cycles from the set of closed paths.

In the same field of endeavor, Grover discloses ranking and selecting restoration routes from a larger set of candidates (paragraphs [0046]-[0057], table 3).

Therefore it would have been obvious to a person of ordinary skill in the art a the time the invention was made to select protection cycles from a set of large candidates by ranking said protection cycles as disclosed by Grover in the method for operating a telecommunications network of Ellinas in order to provide efficient path protection in a mesh network.

Consider claim 24, and as applied to claim 19 above, Ellinas discloses a method of operating a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures wherein other conventional methods of determining the directed cycles may also be used (column 12 lines 24-26).

Therefore it would have been obvious, to a person of ordinary skill in the art at the time the invention was made to use other conventional methods including a mixed selection strategy to pre-select protection cycles in the telecommunications network of

Ellinas as modified by Grover for the purpose of optimizing the path protection in a

mesh network.

7.   Claims 8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ellinas et al. ("Ellinas", United States Patent No.: 6,760,302 B1) in view of Grover et al.

("Grover", United States Patent Application Publication No.: US 2002/0181393 A1), as

applied to claims 7 and 21 above, and further in view of Grover et al. ("Grover-ICC'98",

"Cycle-Oriented Distributed Preconfiguration: Ring-like Speed with Mesh-like Capacity

for Self-Planning Network Restoration", Proceedings of IEEE ICC'98, Atlanta, June 7-

11, 1998 pp. 537-543)

        One of the applied references has a common inventor with the instant

application. Based upon the earlier effective U.S. filing date of the reference, one of

them constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C.

103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention

disclosed but not claimed in the reference was derived from the inventor of this

application and is thus not an invention "by another"; (2) a showing of a date of

invention for the claimed subject matter of the application which corresponds to subject

matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of

the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130

stating that the application and reference are currently owned by the same party and

that the inventor named in the application is the prior inventor under 35 U.S.C. 104,

together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection

might also be overcome by showing that the reference is disqualified under 35 U.S.C.

103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and §

706.02(l)(2).

Consider claim 8, and as applied to claim 7 above, Ellinas clearly discloses a

telecommunications network in which redundant protection fibers are pre-configured to

form protection cycles used to protect the network against link or node failures.

However Ellinas does not specifically disclose pre-selecting candidate cycles by

determining a scoring credit for each closed path in the set of closed paths, where the

scoring credit of said closed path is calculated to predict the success of the closed path

as a pre-configured cycle; and by choosing a select number of closed paths based on

the scoring credit to be the pre-selected candidate cycles.

In the same field of endeavor, Grover-ICC'98 shows and discloses pre-selecting

candidate cycles by determining a score that measures the potential of a closed path to

form an effective pre-configured cycle and by choosing a select number of closed paths

based on the scoring credit to be the pre-selected candidate cycles (page 12 and figure

4).

Therefore it would have been obvious, to a person of ordinary skill in the art at

the time the invention was made to pre-select candidate cycles based on a score as

disclosed by Grover-ICC'98 in the telecommunications network of Ellinas as modified by

Grover in order to provide efficient path protection in a mesh network.

Consider claim 22, and as applied to claim 21 above, Ellinas clearly discloses a method of operating a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures.

However Ellinas does not specifically disclose pre-selecting candidate cycles by determining a scoring credit for each closed path in the set of closed paths, where the scoring credit of said closed path is calculated to predict the success of the closed path as a pre-configured cycle; and by choosing a select number of closed paths based on the scoring credit to be the pre-selected candidate cycles.

In the same field of endeavor, Grover-ICC'98 shows and discloses pre-selecting candidate cycles by determining a score that measures the potential of a closed path to form an effective pre-configured cycle and by choosing a select number of closed paths based on the scoring credit to be the pre-selected candidate cycles (page 12 and figure 4).

Therefore it would have been obvious, to a person of ordinary skill in the art at the time the invention was made to pre-select candidate cycles based on a score as disclosed by Grover-ICC'98 in the telecommunications network of Ellinas as modified by Grover in order to provide efficient path protection in a mesh network.

9.   Claims 11-12 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellinas et al. ("Ellinas", United States Patent No.: 6,760,302 B1) in

view of Wang et al. ("Wang", European Patent Application Publication No.: EP 1 146 682 A2).

Consider claim 11, and as applied to claim 1 above, Ellinas clearly discloses a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures.

However Ellinas does not specifically disclose recording at a node on a pre-configured cycle an identification of protected flow paths that pass through the node and are protected by the pre-configured cycle.

In the same field of endeavor, Wang discloses a system and method for path restoration in a telecommunications network wherein a p-cycle planner pre-calculates protection paths and configures these paths for each node (paragraph [0088]).

Therefore it would have been obvious, to a person of ordinary skill in the art at the time the invention was made to configure each node with the pre-calculated protection paths as disclosed by Wang et al. in the telecommunications network of Ellinas et al. in order to provide efficient path protection in a mesh network.

Consider claim 12, and as applied to claim 11 above, Ellinas as modified by Wang clearly discloses a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures wherein upon the detection of a failure, the node associated with the failed element switches the data onto a path derived from the cycle protecting that element (column 2 lines 45-65).

Consider claim 25, and as applied to claim 15 above, Ellinas clearly discloses a method of operating a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures.

However Ellinas does not specifically disclose recording at a node on a pre-configured cycle an identification of protected flow paths that pass through the node and are protected by the pre-configured cycle.

In the same field of endeavor, Wang discloses a system and method for path restoration in a telecommunications network wherein a p-cycle planner pre-calculates protection paths and configures these paths for each node (paragraph [0088]).

Therefore it would have been obvious, to a person of ordinary skill in the art at the time the invention was made to configure each node with the pre-calculated protection paths as disclosed by Wang et al. in the method of operating telecommunications network of Ellinas in order to provide efficient path protection in a mesh network.

Consider claim 26, and as applied to claim 25 above, Ellinas as modified by Wang clearly discloses a method of operating a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures wherein upon the detection of a failure, the node associated with the failed element switches the data onto a path derived from the cycle protecting that element (column 2 lines 45-65).

10.   Claims 13-14 and 27-28 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ellinas et al. ("Ellinas", United States Patent No.: 6,760,302 B1) in

view of Grover et al. ("Grover", United States Patent Application Publication No.: US

2002/0181393 A1), as applied to claims 4 and 18 above, and further in view of Wang et

al. ("Wang", European Patent Application Publication No.: EP 1 146 682 A2).

        Consider claims 13 and 14, and as applied to claim 4 above, Ellinas as modified

by Grover clearly discloses a telecommunications network in which redundant

protection fibers are pre-configured to form protection cycles used to protect the

network against link or node failures.

        However Ellinas as modified by Grover does not specifically disclose that a path

segment is part of a path of an express flow through a network region or that the pre-

configured cycle is an area boundary flow protecting p-cycle.

        In the same field of endeavor, Wang shows a path segment that is part of a path

of an express flow through a network region and also show an area boundary flow

protecting p-cycle (figure 9 and paragraph [0086]).

        Therefore it would have been obvious, to a person of ordinary skill in the art at

the time the invention was made to have path segments as part of a path of an express

flow through a network region as well as an area boundary flow protecting p-cycle as

shown by Wang in the telecommunications network of Ellinas as modified by Grover in

order to provide efficient path protection in a mesh network.

Consider claims 27 and 28, and as applied to claim 18 above, Ellinas as modified by Grover clearly discloses a method of operating a telecommunications network in which redundant protection fibers are pre-configured to form protection cycles used to protect the network against link or node failures.

However Ellinas as modified by Grover does not specifically disclose that a path segment is part of a path of an express flow through a network region or that the pre-configured cycle is an area boundary flow protecting p-cycle.

In the same field of endeavor, Wang shows a path segment that is part of a path of an express flow through a network region and also show an area boundary flow protecting p-cycle (figure 9 and paragraph [0086]).

Therefore it would have been obvious, to a person of ordinary skill in the art at the time the invention was made to have path segments as part of a path of an express flow through a network region as well as an area boundary flow protecting p-cycle as shown by Wang in the method of operating telecommunications network of Ellinas as modified by Grover in order to provide efficient path protection in a mesh network.

Allowable Subject Matter

8.   Claims 9 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims as well as any corrections to the objections

made above.

9.   The following is a statement of reasons for the indication of allowable subject

matter: Regarding claims 9 and 21, the best prior art found during the examination of

the present application, Ellinas in view of Grover and further in view of Grover-ICC'98

discloses protecting a mesh network using pre-configured protection cycles but fail to

disclose calculating a scoring credit by increasing said scoring credit by a value for each

flow within said closed path that is protected by said closed path, increasing said

scoring credit by a larger value for each flow not on said closed path that is protected by

said closed path, weighting the value provided by each flow according to the traffic

along said each flow and the length of each flow, and taking the ratio of said scoring

credit with the cost of said closed path, as claimed in claims 9 and 23.

Response to Arguments

10.   Applicants' arguments filed on 09/03/2008 have been fully considered but they

are not persuasive. Applicants' basically argue that cycle 331 in Fig. 3 of Ellinas does

not provide paths for failure of straddling path 333 on the premise that in Ellinas, the

fibers used in overlapping protection cycles are physically distinct, as shown in Fig.4, so

that cycle 331 uses different fibers from cycles from 323 and 327 even when they

overlap. Applicants further argue that the mere existence of the protection capacity of

cycle 331 does not enable it to be used, and that the information has to be actively

diverted into the protection cycle. The Examiner agrees with the statement that fibers

used in overlapping protection cycles are physically distinct, the have to, so they provide

an alternate path to the working fibers. The Examiner also agrees in that to enable the

protection afforded by protection cycle the information has to be diverted, and in Ellinas

this is done by the protection switches in the network nodes. However the Examiner

respectfully disagrees with the argument that cycle 331 in Fig. 3 of Ellinas does not

provide paths for failure of straddling path 333. For Example, in Fig.4 path 409 could be

considered equivalent to path 333 in Fig.3, and the outer fiber that runs clockwise in Fig.

4 could be considered equivalent to path 331 in Fig. 3. It is apparent that in case of a

failure of path 409, the protection switches in nodes 103 105 and 101 can divert the

information from node 103 to node 105 through to the outer fiber thereby providing

protection to the straddling path.

Conclusion

11.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

12.   Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed**

to:

>   Commissioner for Patents
>   P.O. Box 1450
>   Alexandria, VA 22313-1450

>   **Hand-delivered responses** should be brought to

>   Customer Service Window
>   Randolph Building
>   401 Dulany Street
>   Alexandria, VA 22314

        Any inquiry concerning this communication or earlier communications from the

examiner should be directed to GERMAN VIANA DI PRISCO whose telephone number

is (571)270-1781. The examiner can normally be reached on Monday through Friday

7:30-5:00 EST.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Rafael Perez-Gutierrez can be reached on (571) 272-7915. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/German Viana Di Prisco/
Examiner, Art Unit 2617

/Rafael Pérez-Gutiérrez/
Supervisory Patent Examiner, Art Unit 2617

November 18, 2008